LEVEL II

HEALTH CARE STUDIES DIVISION REPORT #81-005

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EVALUATION OF PHYSICIANS AND PHYSICIAN EXTENDERS: MANPOWER RESOURCES

by

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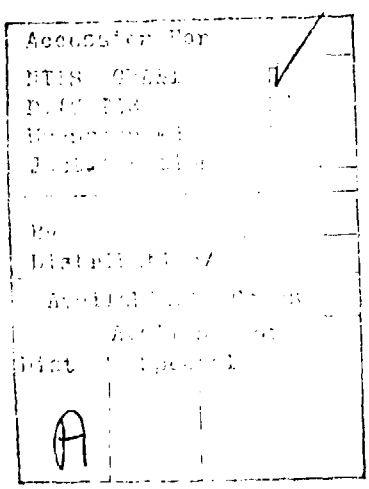
SUMMARY

The purpose of this study was to document the demographic data base of non-military physicians and physician extenders. Study results could be used to provide OTSG and HSC with non-military physician and physician extender manpower data for determining long-term AMEDD personnel requirements.

The results indicate a growing supply of non-military physicians, yet to what extent this may impact on physician distribution, the supply of physician extenders and health care costs remains problematic. Despite the physician surplus, the most significant problems faced by the AMEDD are reducing high turnover rates among young military physicians, and solving the shortage in some subspecialities.

Report recommendations are: (1) that an abstract of the present study be made available to Army health care planners; and (2) that a study be developed to determine current recruitment and retention factors for Army physicians.



1. INTRODUCTION.

a. Problem. The Army Medical Department (AMEDD) in the past has suffered a marked shortage of military physicians. The current strength, as of 30 September 1981, is 4,783 physicians while the authorized strength is 5,273. In order to cope with the shortage of military physicians during war and peace time, the AMEDD has increased usage of physician extenders (PE), particularly physician assistants (PA) and nurse practitioners (NP). Although the Army conducts training programs for MDs, PAs, and NPs, a civilian counterpart population must be determined to evaluate manpower resources available to counteract the predicted shortfall during wartime.

b. Purpose. The investigation will document the demographic data base of non-military physicians and physician extenders.

c. Background. During the last decade, the concern over the manpower shortage of physicians in the U.S. has steadily been replaced by the assumption that the supply of physicians is adequate nationwide and a potential over-supply is possible. Previous studies report that there is no longer a shortage of physicians and recommend no further expansion of medical schools (Scheffler, Weisfeld, Ruley, and Estes, 1978; Bishop and Fein, 1978). However, in certain components of the military service there is a physician shortage. When necessary, active duty Army physicians and PEs may be augmented by manpower resources from the National Guard (NG) and United States Army Reserve (USAR) physician and PE population. Yet, as shown in Table 1, there are shortages of physicians and PEs in these components. Therefore, there is a need to determine the non-military physicians and PE manpower base available for augmentation during war.

2. OBJECTIVE.

To document the current and future manpower supply of non-military physicians and PEs.

3. METHODOLOGY.

A review of the literature was made to identify the range of non-military physicians and PEs and the scope of their utilization. A survey was then conducted of central agencies (e.g., American Association of Medical Assistants, American Medical Association, etc.) to determine the available manpower resources.

4. RESULTS AND DISCUSSION.

Recent projections from the Bureau of Health Manpower, Health Resources Administration (Tables 2 and 2A), indicate that by 1990 there will be 594,000 physicians, representing an increase of approximately 60 percent from 1978, and more significantly, an increase of almost 70 percent in the number of physicians per size of population served (Miike, 1978). The increase in physicians exceeds the increase in the general population growth, hence the ratio of 177.3 physicians per 100,000 population in 1975 is increased to 242.2 per 100,000 in 1990. Comparative growth estimates for other health professionals show that for dentists and optometrists it is over 30 percent; for pharmacists nearly 50 percent; and for podiatrists and nurses it is more than 70 percent.

Most estimates of physicians growth do not make any adjustments for changes in physician productivity. Although there are several ways to measure physician productivity, one measure often used is the number of patient visits. Several productivity estimates based on patient visits are available and describe an increase of two percent to more than four percent per year, compared to a three percent productivity increase for the whole economy (Reinhardt, 1975; Scheffler, 1974; Hadley, 1974). Estimates* (Scheffler, Yoder, Weisfeld, and Ruley, 1979) predict that if physician productivity increases one-half a percentage point per year, then by 1990 productivity will have increased eight percent. If this estimate is accurate, physicians in 1990 should provide a level of services equivalent to about 45,000 additional physicians due to greater productivity alone. However, the type and quality of services will influence these estimates.

The Bureau of Health Manpower projections estimate that the demand for physicians in the United States in 1990 will be 221.4 to 233.0 per 100,000 population and that the supply will be 242.2 physicians per 100,000 population, or an estimated surplus of 23,000 to 51,400 physicians. Another study estimates that 510,000 physicians will be required in 1990 and the projected supply is estimated to be 564,200, for a surplus of 50,000 physicians (Scheffler, et al., 1979).

Although an adequate overall supply of non-military physicians will exist in the near future for military service, specialty mix will continue to be of some concern. The most critical specialties for military medicine during the war are the surgical specialties. Tables 3 and 4 show the distribution of physicians by specialty group over time.

Physicians practicing general surgery composed 35 percent of the total number of surgeons in 1970. There was a slight decrease in the proportion of general surgeons to total surgeons (32 percent) in 1977. Overall, the number of primary care (PC) surgeons increased 17 percent from 115,505 in 1970 to 139,248 in 1977, while the number of surgeons increased 16 percent from 84,545 in 1970 to 100,059 in 1977. Among the surgical specialties, orthopedic surgeons increased 23 percent from 9,467 in 1970 to 12,223 in 1977. Projections by specialty group indicate that from 1980 to 1990 there will be a 49 percent increase in the number of PC surgical specialties (Scheffler et al., 1979).

From 1970 to 1977, the active physician population increased by 15 percent and the proportion of PC physicians remained relatively constant. Even though the proportion of PC physicians to the overall total number of physicians for years 1970 to 1977 remained relatively constant, there were increases in the number of PC internal medicine physicians to total PC physicians (36 percent in 1970 compared to 44 percent in 1977). On the other hand, the proportion of PC general practitioners to total PC physicians decreased from 49 percent in 1970 to 39 percent in 1977.

The increasing supply of physicians will ultimately determine the availability and distribution of PEs. Since patient flow is a determining factor for the PE job market, an increase in the number of physicians and a higher physician to population ratio could adversely affect employment

*For a critique of the manpower projection models that are used see Reinhardt, 1975; Fein, 1975; Klarman, 1969; and Lave and Leinhardt, 1975.

and utilization of PEs. If federal support for training continues at current levels, it is estimated that by 1990 there will be approximately 18,520 PAs and 23,030 NPs (Scheffler et al., 1979). Since 60 percent of present NP training programs (118 out of 198) and 26 percent of programs training PAs (13 out of 50) operate without federal support, a reduction in federal support should not reduce the production of PAs entirely (Scheffler et al., 1979). Another estimate projects 24,500 PAs and 38,020 Nps by 1990 (see Table 5). These figures assume that the number of yearly graduates remains constant. Current estimates indicate the number of PEs in 1979 to be 8,000 PAs and 16,240 NPs (see Table 6). Approximately 60 percent of NPs with master's degrees and 90 percent from certificate programs were trained in primary care. In a recent report, Scheffler (1978) found that 70-80 percent of the PAs studied were employed by primary care physicians.

Estimates and projections of graduates of health professions are shown in Table 7. Enrollment data for accredited health occupation programs is shown in Table 8.

Between 1975 and 1990, it is estimated that the number of physician graduates will increase 33 percent (combining medicine and osteopathy graduates). The projected increase in physician graduates from 1975 to 1990 represents a far greater increase than dentistry with a nine percent increase, optometry with a 24 percent increase, and pharmacy with an eight percent increase. The increasing number of physician residents on duty in 1977, 1978, and 1979 reflect the early stage of this predicted growth (shown in Table 9). Between 1977 and 1979, the number of physician residents increased approximately 14 percent, from 56,019 to 64,615.

5. CONCLUSIONS

Despite the physician surplus in the non-military sector the biggest problems faced by the AMEDD are reducing the high turnover rate among young military physicians, and solving the shortage in some subspecialties. Critical shortages in these subspecialties may be alleviated by increasing training in those areas and reducing training in areas of surplus. It has been reported that for the first time since the end of the Vietnam War the services are now at or beyond their authorized physician strength (Viau, 1981). This has been attributed to the military's medical scholarship program and its medical school, as well as the physician pay bonus. However, the planned elimination of federal capitation to civilian medical schools, cutbacks in federal loan support, and the physican surplus could enhance recruitment and retention of military physicians.

6. RECOMMENDATIONS.

a. Recommend that an abstract of the present study be made available to Army health care planners.

b. Recommend a study to determine current recruitment and retention factors for Army physicians.

REFERENCES

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12. Viau, S., "Doctor Glut Could Alter Military Training Plans," U.S. Medicine, Vol. 17, No. 12, June 15, 1981.

Table 1

National Guard (NG) and United States Army Reserve (USAR) Manpower Data for Physicians and Physician Extenders

	NG		USAR	
	Authorized	Actual	Authorized	Actual
Physician	1234	597	3356	1004 (Troop Unit) 690 (IRR) 779 (Standby)
Nurses	622	764	5628	3522 (Troop Unit) 1053 (IRR) 460 (Standby)
Physician's Assistants	268	149	15	33 (Troop Unit)** 31 (IRR) 4 (Standby)

*Figures are as of 31 May 1981.
**Some PA positions are due to a conversion from 60E.

Table 2

Health Manpower Supply: Trends and Projections, Selected Years

Discipline	Year	Supply		
		Number (x1000)	Professionals per 100,000 Population	Professional to Population Ratio
Physicians (MDs and DOs)	1960 ...	259.5	143.6	1:696
	1970 ...	323.2	157.8	1:634
	1975 ...	378.6	177.3	1:564
	1980 ...	444.0	199.3	1:502
	1985 ...	519.0	221.7	1:451
	1990 ...	594.0	242.4	1:413
Dentists	1960 ...	90.1	49.4	1:2,024
	1970 ...	102.3	49.6	1:2,016
	1975 ...	112.8	52.9	1:1,890
	1980 ...	127.0	57.1	1:1,751
	1985 ...	141.7	60.5	1:1,653
	1990 ...	153.0	62.4	1:1,603
Optometrists	1960 ...	16.1	8.9	1:11,236
	1970 ...	18.4	9.0	1:11,111
	1975 ...	19.9	9.3	1:10,753
	1980 ...	22.0	9.9	1:10,101
	1985 ...	24.4	10.4	1:9,615
	1990 ...	26.7	10.9	1:9,174
Podiatrists	1960 ...	7.0	3.9	1:25,641
	1970 ...	7.1	3.5	1:28,571
	1975 ...	7.3	3.4	1:29,412
	1980 ...	8.7	3.9	1:25,541
	1985 ...	10.5	4.5	1:22,222
	1990 ...	12.5	5.1	1:19,608
Pharmacists	1960 ...	92.7	51.3	1:1,949
	1970 ...	109.6	53.5	1:1,869
	1975 ...	122.6	57.4	1:1,742
	1980 ...	144.3	64.8	1:1,543
	1985 ...	165.2	69.5	1:1,439
	1990 ...	185.4	75.7	1:1,321

Table 2 (contin.)

Discipline	Year	Supply		
		Number (000's)	Professionals per 100,000 Population	Professional to Population Ratio
Veterinarians	1960 ...	19.5	10.8	1:9,259
	1970 ...	25.9	12.6	1:7,937
	1975 ...	31.1	14.6	1:6,849
	1980 ...	37.5	16.8	1:5,952
	1985 ...	45.6	19.5	1:5,128
	1990 ...	54.9	22.4	1:4,464
Registered Nurses	1960 ...	504.0	282.0	1:355
	1970 ...	722.0	356.0	1:281
	1975 ...	906.0	427.0	1:234
	1980 ...	1,152.0	520.0	1:192
	1985 ...	1,345.0-1,380.0	579.0-584.0	1:171-1:173
	1990 ...	1,484.0-1,587.0	616.0-653.0	1:153-1:162

Projections made by the Health Resources Administration of DHEW. (1978)

Table 2A

Professionally Active Physicians (M.D.'s and D.O.'s), According to Type of Physician and Number per 10,000 Population: United States and Outlying U.S. Areas, Selected Years, 1950-77 Estimates and 1980-90 Projections

Year	Type of physician			Professionally active physicians per 10,000 population
	Total	Doctors of medicine (M.D.)	Doctors of osteopathy (D.O.)	
	Number of physicians			
1950	219,900	209,000	10,900	14.2
1960	259,500	247,300	12,200	14.2
1970	323,200	311,200	12,000	15.5
1971	334,100	322,000	12,100	15.9
1972	345,000	332,400	12,600	16.3
1973	350,100	337,000	13,100	16.4
1974	362,500	348,900	13,600	16.8
1975	378,600	364,500	14,100	17.4
1976	390,600	376,100	14,500	17.9
1977	395,200	380,200	15,000	17.9
1980	444,000	426,300	17,700	20.0
1985	519,000	495,700	23,300	22.3
1990	594,000	564,200	29,800	24.4

NOTES: Population for selected years 1950-77 includes residents in the 50 States, District of Columbia, civilians in Puerto Rico and other U.S. outlying areas; U.S. citizens in foreign countries; and the Armed Forces in the United States and abroad. For years 1980-90, the Series II projections of the total population from the U.S. Bureau of the Census were used. Estimation and projection methods of the Bureau of Health Manpower were used. The number of M.D.'s differs from the American Medical Association figures because a variant proportion of the physicians not classified by specialty is allocated into the total.

SOURCES: Bureau of Health Manpower: A Report to the President and Congress on the Status of Health Professions Personnel in the United States. DHEW Pub. No. (HRA) 78-93. Health Resources Administration. Hyattsville, Md. Aug. 1978, and selected data from Manpower Analysis Branch; U.S. Bureau of the Census: Current Population Reports. Series P-25, Nos. 336,603,704, and 803. Washington. U.S. Government Printing Office, Apr. 1966, July 1975, July 1977, Sept. 1978, and June 1979, and unpublished data.

Table 3

Professionally Active Physicians (M.D.'s), According to Primary Specialty: United States, Selected Years 1970-77

(Data are based on reporting by physicians)

Primary Specialty	Year					
	1970	1972	1974	1975	1976	1977
	Number of Physicians					
Professionally Active Physicians	304,926	315,522	325,567	335,608	343,876	359,515
Primary Care	115,505	120,876	124,572	128,745	134,051	139,515
General Practice[1]	56,804	54,357	53,152	53,714	54,631	54,361
Internal Medicine	41,196	47,343	51,143	53,712	57,312	61,278
Pediatrics	17,505	19,176	20,277	21,319	22,108	23,609
Other Medical Specialties	17,127	16,282	17,220	18,743	18,702	19,656
Dermatology	3,957	4,166	4,414	4,594	4,755	4,844
Pediatric Allergy	388	379	423	439	469	485
Pediatric Cardiology	471	505	521	527	537	563
Internal Medicine Sub-Specialties[2]	12,331	11,232	11,862	13,183	12,941	13,764
Surgical Specialties	84,545	89,666	92,123	94,776	97,416	100,059
General Surgery	29,216	30,518	30,672	31,173	31,899	32,014
Neurological Surgery	2,537	2,716	2,824	2,898	2,959	3,049
Obstetrics and Gynecology	18,498	19,820	20,607	21,330	21,908	23,038
Ophthalmology	9,793	10,318	10,621	11,011	11,326	11,483
Orthopedic Surgery	9,467	10,216	10,861	11,267	11,689	12,223
Otolaryngology	5,305	5,563	5,509	5,670	5,788	5,910
Plastic Surgery	1,583	1,770	2,075	2,224	2,337	2,509
Colon and Rectal Surgery	663	645	655	655	667	652
Thoracic Surgery	1,779	1,899	1,909	1,960	2,020	2,131
Urology	5,704	6,201	6,390	6,588	6,823	7,050
Other Specialties	87,749	88,698	91,652	93,344	93,707	100,552
Anesthesiology	10,725	11,740	12,375	12,741	13,074	13,815
Neurology	3,027	3,438	3,791	4,085	4,374	4,577
Pathology	10,135	10,881	11,274	11,603	11,815	12,260
Forensic Pathology	193	187	192	186	203	206
Psychiatry	20,901	22,319	23,075	23,683	24,196	24,689
Child Psychiatry	2,067	2,242	2,384	2,557	2,618	2,877
Physical Medicine and Rehabilitation	1,443	1,503	1,557	1,615	1,665	1,742
Radiology	10,380	11,772	11,485	11,417	11,627	12,062
Diagnostic Radiology	1,941	2,055	3,054	3,500	3,794	4,236
Therapeutic Radiology	855	920	1,060	1,161	1,202	1,305
Miscellaneous[3]	26,082	21,641	21,405	20,796	19,139	22,783

Table 3 (contin.)

[1]Includes general practice and family practice.
[2]Includes gastroenterology, pulmonary diseases, allergy, and cardiovascular diseases.
[3]Includes occupational medicine, general preventive medicine, aerospace medicine, public health, other specialties not listed, and unspecified specialties.

NOTE: Federal and non-Federal active M.D.'s in the 50 States and the District of Columbia are included. Physicians not classified, inactive physicians, and physicians with unknown address in the United States are excluded. For 1977 this includes 17,953 physicians not classified, 28,231 physicians inactive, and 10,946 physicians with unknown address.

SOURCES: Haug, J.N., Roback, G.A., and Martin, B.C.: Distribution of Physicians in the United States, 1970. Chicago. American Medical Association, 1971. (Copyright 1971: Used with the permission of the American Medical Association.); Roback, G.A.: Distribution of Physicians in the U.S., 1972. Chicago. American Medical Association, 1973. (Copyright 1973: Used with the permission of the American Medical Association.); Roback, G.A. and Mason, H.R.: Physician Distribution and Medical Licensure in the U.S., 1974. Chicago. American Medical Association, 1975. (Copyright 1975: Used with the permission of the American Medical Association.); Goodman, L.J. and Mason, H.R.: Physician Distribution and Medical Licensure in the U.S., 1975. Chicago. American Medical Association, 1976. (Copyright 1976: Used with the permission of the American Medical Association.); Goodman, L.J.: Physician Distribution and Medical Licensure in the U.S., 1976. Chicago. American Medical Association, 1977. (Copyright 1977: Used with the permission of the American Medical Association.); Department of Statistical Analysis: Physician Distribution and Medical Licensure in the U.S., 1977. Chicago. American Medical Association, 1979. (Copyright 1979: Used with the permission of the American Medical Association.)

Table 4

Professionally Active Physicians (M.D.'s), According to Primary Specialty:
United States and Outlying U.S. Areas,
1975 and 1977 Estimates and Selected 1980-90 Projections

(Data are based on reporting by physicians and medical schools)

Primary Specialty	Year				
	1975	1977	1980	1985	1990
	Number of Physicians				
All Specialties	364,480	380,180	426,350	495,750	564,210
Primary Care[1]	139,920	147,370	168,670	209,220	250,880
Other Medical Specialties	20,360	20,810	24,520	29,210	34,000
Surgical Specialties	102,840	105,760	113,820	124,770	134,820
Other Specialties	101,350	106,240	119,340	132,550	144,520

[1]Includes general practice, family practice, internal medicine, and pediatrics.

NOTE: Estimation and projection methods of the Bureau of Health Manpower, Health Resources Administration, were used. These data differ from the American Medical Association data because a variant proportion of the physicians not classified by specialty is allocated back into the data.

SOURCE: Bureau of Health Manpower: A Report to the President and Congress on the Status of Health Professions Personnel in the United States. DHEW Pub. No. (HRA) 78-93. Health Resources Administration. Hyattsville, Md., Aug. 1978, and selected data.

*Data does not include D.O.'s.

Table 5

Estimates and Projections of Nonphysician Health Care Providers: United States, 1977, 1980, and 1990

Year	Total	Type of Provider	
		Nurse Practitioner	Physician's Assistant
1977	17,280	12,280	5,000
1980	27,720	18,220	9,500
1990	62,520	38,020	24,500

NOTE: Projections assume no change in the number of yearly graduates from nurse practitioner and physician's assistant training programs. Includes nonphysician providers not currently employed.

SOURCES: Light, J.A., Crain, M.F., and Fisher, D.W.: Physician assistant, a profile of the profession, 1976. The PA Journal 7(3):109-123, Fall 1977; Sultz, H.A., et al.: Longitudinal Study of Nurse Practitioners, Phase III.

Table 6

Nonphysician Health Care Providers,
According to Selected Characteristics: United States, 1979

Characteristic	Nurse Practitioner		Physician's Assistant	MEDEX
	Certificate	Master's Degree		
Total[1]	16,240		8,000	
		Percent		
Primary Care[2]	89	64	69	82
Female	98	98	21	12
Other Than White	12	6	13	17
		Age in Years		
Average Age	36	32	32	32

[1]Estimated number.

[2]Includes pediatrics, family practice, general practice, and internal medicine.

NOTE: Includes nonphysician providers not currently employed.

SOURCES: Scheffler, R.M.: The Supply and Demand for New Health Professionals, Physician's Assistants and MEDEX. Contract No. HRA-1-44184, Bureau of Health Manpower, Health Resources Administration. Hyattsville, Md. 1978; Sultz, H.A., et al.: Longitudinal Study of Nurse Practitioners, Phase III.

Table 7

Graduates of health professions schools and number of schools, according to profession: United States, selected years, 1950-77 estimates and 1980-90 projections

(Data are based on reporting by health professions schools)

Year	Profession				
	Medicine	Osteopathy	Dentistry	Optometry	Pharmacy
			Number of graduates		
1950	5,553	373	2,830	961	---
1960	7,081	427	3,290	364	3,497
1970	8,367	432	3,749	445	4,747
1975	12,714	698	4,937	806	6,886
1977	14,393	964	5,324	1,027	7,908
1980	16,086	1,069	5,150	998	7,455
1990	18,318	1,669	5,400	1,067	7,469
			Number of schools		
1950	79	6	42	10	---
1960	86	6	47	10	76
1970	103	7	53	11	74
1975	114	9	59	12	73
1977	122	11	59	13	72
1980	121	13	60	12	72
1990	122	13	60	13	72

SOURCE: Bureau of Health Manpower: A report to the President and Congress on the Status of Health Professions Personnel in the United States. DHEW Pub. No. (HRA) 78-93. Health Resources Administration. Hyattsville, MD., Aug. 1978, and selected data.

Table 8

Enrollment Data for Accreditcd Health Occupation Programs

Occupations	No. of Programs, 7/31/80	Student Capacity, 1979	1979 Student Data	
			Enrollment	Graduates
Assistant to the primary care physician	54	1,857	2,970	1,382
Cytotechnologist	74	480	382	320
Electroencephalographic technician	1	5	20	19
Electroencephalographic technologist	15	175	137	71
Emergency medical technician-paramedic	0	0	0	0
Histological technician	47	233	144	105
Medical assistant	141	8,648	9,608	5,133
Medical assistant in pediatrics	1	25	20	8
Medical laboratory technician (associate degree)	105	2,299	3,534	1,308
Medical laboratory technician (certificate)	99	1,764	1,729	1,298
Medical record administrator	51	1,175	1,350	743
Medical record technician	78	1,864	2,488	883
Medical technologist	652	8,732	5,128	6,371
Nuclear medicine technologist	153	1,245	1,101	777
*Nurse practitioner (Primary Care)	198			1,980
Occupational therapist	50	2,089	2,430	1,928
Ophthalmic medical assistant	3	47	61	32
Physician	126		64,195	15,135
Physical therapist	62	2,251	5,767	2,303
Radiation therapy technologist	92	848	437	310
Radiographer	795	26,715	16,948	7,677
Respiratory therapist	175	4,690	7,010	2,744
Respiratory therapy technician	173	2,826	4,032	2,708
Specialist in blood bank technology	57	192	136	119
Surgeon's assistant	4	65	97	48
Surgical technologist	80	1,414	1,561	1,027

*Nurse practitioner data based on 1977 student data

Source: Public Health Service, Office of Health Research, Statistics, and Technology: Health United States 1979. DHEW Pub. No. (PHS) 80-1232 National Center for Health Statistics, Hyattsville, Md.; 80th Annual Report: Medical Education in the U.S. 1979-1980. JAMA, Vol 244, No. 25: 2791-2938, 1980.

Table 9

Number of Residents on Duty Sept 1, 1977, 1978, and 1979

Specialty	Residents on Duty		
	Sept 1, 1977	Sept 1, 1978	Sept 1, 1979
Allergy and immunology	40	120	155
Anesthesiology	2,242	2,378	2,491
Colon and rectal surgery	39	39	42
Dermatology	694	800	801
Dermatopathology	9	17	19
Family practice	4,966	6,000	6,352
Internal medicine	12,797	16,178	16,580
Neurological surgery	532	560	579
Neurology	1,155	1,194	1,212
Nuclear medicine	143	157	174
Obstetrics/gynecology	3,866	4,448	4,496
Opthalmology	1,521	1,561	1,538
Orthopedic surgery	2,026	2,482	2,572
Otolaryngology	927	951	1,038
Pathology	2,594	2,564	2,519
Blood banking	5	17	21
Forensic pathology	17	24	24
Neuropathology	28	39	52
Pediatrics	4,734	5,331	5,603
Pediatric allergy	88	56	53
Pediatric cardiology	77	117	128
Physical medicine and rehabilitation	430	436	490
Plastic surgery	342	406	412
Preventative medicine, general	128	166	199
Aerospace medicine	37	16	25
Occupational medicine	29	55	70
Public health	20	26	23
Psychiatry	3,921	4,056	3,901
Child psychiatry	564	552	521
Radiology, diagnostic	2,453	2,802	3,024
Radiology, diagnostic (nuclear)	0	56	45

Table 9 (contin.)

Radiology, therapeutic	345	385	377
Surgery	7,333	7,792	7,699
Pediatric surgery	12	24	37
Thoracic surgery	265	294	276
Urology	1,039	1,064	1,077
General practice	301	0	0
Total	56,019	63,163	64,615

SOURCE: JAMA, Vol. 244, No. 25: 2791-2938, 1980